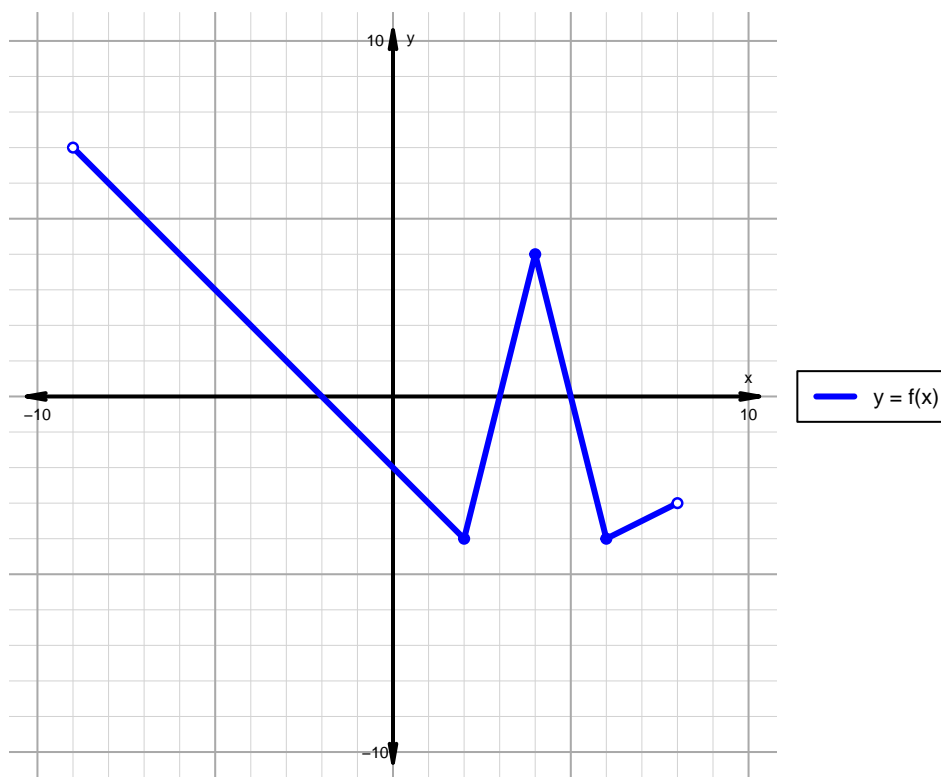


Name: \_\_\_\_\_

Date: \_\_\_\_\_

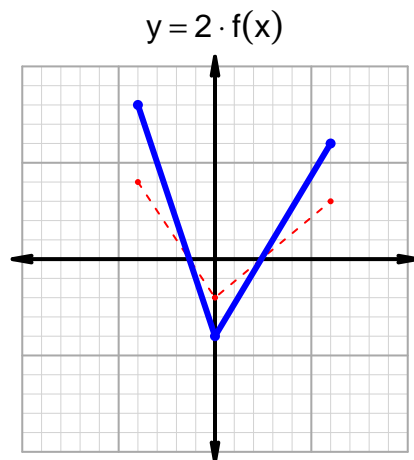
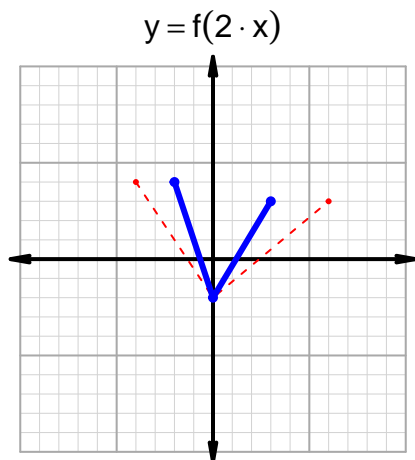
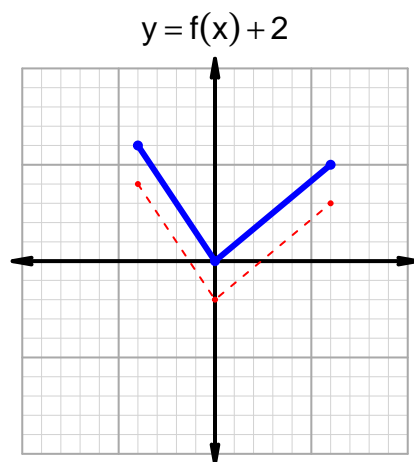
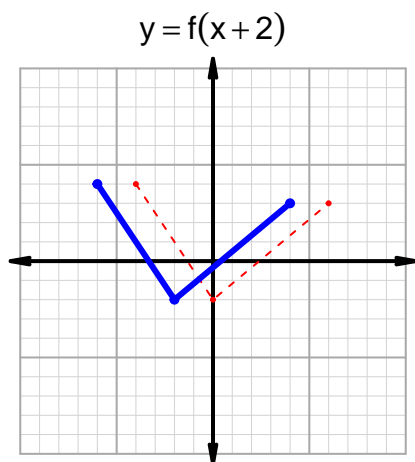
**Intervals, Transformations, and Slope Solution (version 9)**1. The function  $f$  is graphed below.

Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-9, -2) \cup (3, 5)$
Negative	$(-2, 3) \cup (5, 8)$
Increasing	$(2, 4) \cup (6, 8)$
Decreasing	$(-9, 2) \cup (4, 6)$
Domain	$(-9, 8)$
Range	$(-4, 7)$

## Intervals, Transformations, and Slope Solution (version 9)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 23$  and  $x_2 = 65$ . Express your answer as a reduced fraction.

$x$	$g(x)$
23	61
55	23
61	65
65	55

$$\frac{g(65) - g(23)}{65 - 23} = \frac{55 - 61}{65 - 23} = \frac{-6}{42}$$

The greatest common factor of -6 and 42 is 6. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-1}{7}$$